

Docket No. LPTF06
US App. No. 10/510,195

REMARKS

Status of the Application

Claims 1, 18, 19, and 21-26 were previously pending.

Claims 1, 18, 19, 24 and 25 were rejected under 35 USC 103(a) as being unpatentable over Bashara (US 2,877,852) in view of Voll et al. (US 5,624,560).

Claims 26, 21 and 22 were rejected under 35 USC 103(a) as being unpatentable over Rouse et al. (US 6,158,507) in view of Richard et al. (US 5,611,399), Simone et al (US 5,937,944), Bashara (US 2,877,852), and Voll et al. (US 5,624,560).

Claim 23 was rejected under 35 USC 103(a) as being unpatentable over Rouse et al. (US 6,158,507) in view of Richard et al. (US 5,611,399), Simone et al (US 5,937,944), Bashara (US 2,877,852), and Voll et al. (US 5,624,560) as applied to claim 26, and further in review of Ilfrey et al. (US 4,858,691).

Applicant has amended claim 1 to combine all the features of claim 19, amended claim 24 to combine all the features of claim 25, amended claim 26 to combine all the features of claim 22, and canceled claims 19, 25 and 22. For the reasons discussed below, withdrawal of the rejections is requested.

Claim Rejections- 35 U.S.C. 103(a)

Claims 1, 18, 19, 24 and 25 were rejected under 35 USC 103(a) as being unpatentable over Bashara (US 2,877,852) in view of Voll et al. (US 5,624,560).

Applicant respectfully traverses the rejection for reasons discussed below. In order to expedite the prosecution, Applicant has amended claim 1 to combine the features recited in claim 19.

In rejecting claim 1, the Office Action asserted that "Bashara teaches a composite filtering mesh comprising: a bottom diffusion mesh (19) and two or more weave meshes (123) fixed on an outer surface of the bottom diffusion mesh, and at least one inter-layer diffusion

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mesh (50) positioned between two said weave meshes, the inter-layer diffusion mesh being fixed on an outer surface of one of the two twill weave meshed (fig. 5).”

Bashara teaches a well filter which includes an inner screen 19, an outer screen 18, a plurality of screen cylinders 50 disposed between inner screen 19 and outer screen 18, and glass cloth fabric layers 123 spaced alternately with respect to screen cylinders 50. See Col. 5, lines 1-12 and Fig. 5. The inner screen 19 is quite different from the bottom diffusion mesh of the present invention. As recited in the amended claim 1, the bottom diffusion mesh is a woven mesh or a punching steel plate mesh with a mesh size of 5-50 mesh for diffusing filtrated fluid. While inner screen 19 of Bashara is a screen. Inner screen 19 together with a spring coil 25 is used to maintain the cloth layer 23/123 under longitudinal and lateral tension. Bashara describes several ways to achieve this. For example, coil spring 25 disposed within inner screen 19 is used to apply a stretching force to inner screen 19 and the cloth layers thereon. Col. 3, lines 35-49. Bashara further teaches that “longitudinal tension will be applied to the cloth layers due to their frictional contact with the screens and with each other”. Col. 3, lines 15-17. From Bashara’s teaching, it is clear that inner screen 19 and outer screen 18 are required to have certain flexibility and strength to respond to the coil spring and to hold the cloth layers 23/123 under longitudinal and lateral tension. Bashara does not teach or suggest that a woven mesh or a punching steel plate mesh can be used as inner screen 19.

Claim 1 further recites an inter-layer diffusion mesh which is a woven mesh with a mesh size of 10-60 mesh. While screen cylinder 50 is the same screen as screen 19 (Fig. 5), therefore, it is different from the inter-layer diffusion mesh of the present invention.

Voll was cited to teach a metallic twill weave mesh which is missing from Bashara. However, Voll cannot cure the discussed deficiencies of Bashara.

For the reasons discussed above, claim 1 is patentable over of Bashara and Voll. Claim 18 depends from claim 1 and, thus, is also patentable for at least the same reasons.

Claim 24 is directed to a sand control pipe and recites similar features of the composite metal filtering mesh as claim 1. Therefore, for similar reasons as discussed above, claim 24 is patentable over of Bashara and Voll.

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Claims 26, 21 and 22 were rejected under 35 USC 103(a) as being unpatentable over Rouse et al. (US 6,158,507) in view of Richard et al. (US 5,611,399), Simone et al (US 5,937,944), Bashara (US 2,877,852), and Voll et al. (US 5,624,560).

In rejecting claim 26, the Office Action acknowledged that Rouse does not teach the composite metal filtering mesh as claimed, but cited Bashara and Voll to teach the composite metal filtering mesh.

Claim 26 as amended recites "the composite metallic filtering mesh comprises: a bottom diffusion mesh and two or more twill weave meshes; an innermost one of the twill weave meshes being fixed on an outer surface of the bottom diffusion mesh; and at least one inter-layer diffusion mesh positioned between two twill weave meshes; wherein the bottom diffusion mesh is a woven mesh or a punching steel plate mesh with a mesh size of 5-50 mesh; apertures of the twill weave mesh are 40-400 micron; the inter-layer diffusion mesh is a woven mesh with a mesh size of 10-60 mesh". As discussed above in connection to claim 1, Bashara and Voll fail to teach such a composite metal filtering mesh.

Richard and Simone also fail to teach such a composite metal filtering mesh.

Therefore, claim 26 is patentable over of Rouse, Richard, Simone, Bashara and Voll. Claim 21 depends from claim 26 and, thus, is also patentable for at least the same reasons.

Claim 23 was rejected under 35 USC 103(a) as being unpatentable over Rouse et al. (US 6,158,507) in view of Richard et al. (US 5,611,399), Simone et al (US 5,937,944), Bashara (US 2,877,852), and Voll et al. (US 5,624,560) as applied to claim 26, and further in review of Ilfrey et al. (US 5,858,691).

Ilfrey was cited to teach the two or more support blocks recited in claim 23. However, Ilfrey clearly cannot cure the other deficiencies of Rouse, Richard, Simone, Bashara and Voll discussed above in connection with claim 26. Therefore, claim 26 as well as dependent claim 23 are patentable over Rouse, Richard, Simone, Bashara, Voll and Ilfrey.

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that the remaining claims 1, 18, 21, 23, 24 and 26 are now in condition for allowance. Allowance of this application is earnestly solicited.

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